

* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] The semiconductor device characterized by providing or including the following. The gray dead silicon germanium layer which germanium composition increases on a silicon germanium substrate, the active layer which makes germanium a principal component, and the gray dead silicon germanium layer in which germanium composition decreases. V group element is many [1 to 2%] III-V group compound semiconductor layers, and a III-V group compound semiconductor active layer to a stoichiometry to the field which adjoins the field in which this aforementioned p type transistor was prepared at least while constituting the p type transistor which uses the aforementioned silicon germanium active layer as a channel layer to a field in part. n type transistor which uses the aforementioned III-V group compound semiconductor active layer as a channel layer.

[Claim 2] The semiconductor device according to claim 1 with which the above-mentioned silicon germanium substrate, the gray dead silicon germanium layer which the above-mentioned germanium composition increases, the active layer which makes the above-mentioned germanium a principal component, and the gray dead silicon germanium layer in which the above-mentioned germanium composition decreases are characterized by having germanium composition which the misfit transition by grid mismatching does not generate.

[Claim 3] The semiconductor device according to claim 1 or 2 characterized by germanium composition of the above-mentioned silicon germanium substrate making it 0.3 or 0.7.

[Claim 4] A semiconductor device given in the claim 1 characterized by for the active layer which makes the above-mentioned germanium a principal component being a germanium active layer whose germanium composition is 100%, and the above-mentioned III-V group compound semiconductor active layer being a GaAs active layer, or any 1 term of 3.

[Claim 5] A semiconductor device given in the claim 1 characterized by for the above-mentioned p type transistor being an insulated-gate type electric field effect type transistor, and n type transistor being an HEMT, or any 1 term of 4.

[Claim 6] The gray dead silicon germanium layer which germanium composition increases on a silicon germanium substrate, The active layer which makes germanium a principal component, the gray dead silicon germanium layer in which germanium composition decreases, V group element receives a stoichiometry. Many [1 to 2%] III-V group compound semiconductor layers, And a III-V group compound semiconductor active layer is prepared. After exposing the gray dead silicon germanium layer in which the aforementioned III-V group compound semiconductor active layer and the aforementioned V group element remove alternatively many [1 to 2%] III-V group compound semiconductor layers to a stoichiometry, and germanium composition decreases, The manufacture method of the semiconductor device characterized by forming n type transistor in a III-V group compound semiconductor active-layer side while forming p type transistor in this exposed field side.

[Translation done.]